

Listing of Claims

1-4. (Canceled)

5. (Currently amended) A method of producing oil comprising:

a) introducing into progenitor cells of a plant a heterologous constitutive promoter operatively linked to a heterologous polynucleotide that encodes a HIO102 polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2, wherein the polypeptide confers a high oil phenotype of increased oil content relative to a plant of the same species not comprising the heterologous constitutive promoter operatively linked to the heterologous polynucleotide, and wherein there is no statistically significant increase in the proportion of long chain fatty acid components of seed oil relative to seed oil from a plant of the same species not comprising the heterologous constitutive promoter operatively linked to the heterologous polynucleotide;

b) growing the transformed progenitor cells to produce a transgenic plant, wherein said heterologous polynucleotide sequence is expressed;

c) identifying a transgenic plant that exhibits the high oil content phenotype; and

e)d) recovering oil from said transgenic plant.

6-7. (Canceled)

8. (Currently amended) The method of ~~claim 6~~ claim 5, wherein the plant is selected from the group consisting of rapeseed, soy, corn, sunflower, cotton, cocoa, safflower, oil palm, coconut palm, flax, castor and peanut.

9-11. (Canceled)

12. (Previously presented) A method of producing a plant with a high oil phenotype, said method comprising:

a) introducing into progenitor cells of the plant a heterologous constitutive promoter operatively linked to a heterologous polynucleotide that encodes a HIO102

polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2, wherein the polypeptide confers a high oil phenotype of increased oil content relative to a plant of the same species not comprising the heterologous constitutive promoter operatively linked to the heterologous polynucleotide, and wherein there is no statistically significant increase in the proportion of long chain fatty acid components of seed oil relative to seed oil from a plant of the same species not comprising the heterologous constitutive promoter operatively linked to the heterologous polynucleotide;

- b) growing the transformed progenitor cells to produce a transgenic plant, wherein said heterologous polynucleotide sequence is expressed; and
- c) identifying a transgenic plant that exhibits the high oil content phenotype.

13. (New) The method of claim 12, wherein the plant is selected from the group consisting of rapeseed, soy, corn, sunflower, cotton, cocoa, safflower, oil palm, coconut palm, flax, castor and peanut.